

INTERNATIONAL SEMINAR ON THE MANAGEMENT OF RESEARCH AND DEVELOPMENT

F.F. Neubauer

Corporate Strategy Part II

Strategic Management and the R&D Function

Links between factors boosting profitability and R&D

- Product quality as an example
- Two views on quality
- Impact of quality on ROI
- The link between technology and quality
- Formulating a product quality strategy
- Developing action plans

2021554448

R&D2

DIFFERENTIATION FROM COMPETITORS

KEY PROFIT DETERMINANTS

- * Quality
- * Relative price
- * New product introductions

2021554449

The Two Views of Product Quality

- Internal: Quality control, conformance to specifications
(linked to manufacturing productivity)
- External: Customer-perceived quality
(linked to value and customer satisfaction)

2021554450

DEFINITION OF 'QUALITY'

- * The customer's judgement, not yours
- * Both the product and the associated services
- * Not absolute, but relative to competitors
- * Does not include price

Quality Index =

Percent of Sales from Superior Products
minus
Percent of Sales from Inferior Products

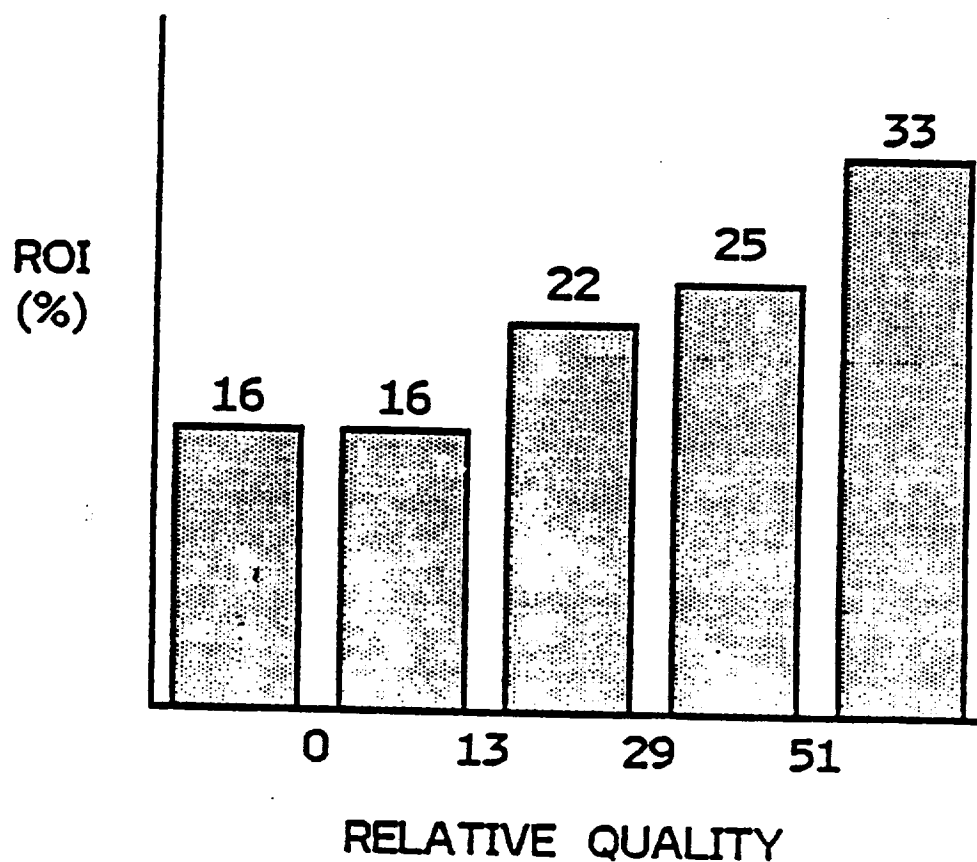
5 products

+	①	40%
=	②	25%
=	③	20%
-	④	10%
=	⑤	5%

40 - 10 = 30

2021554451

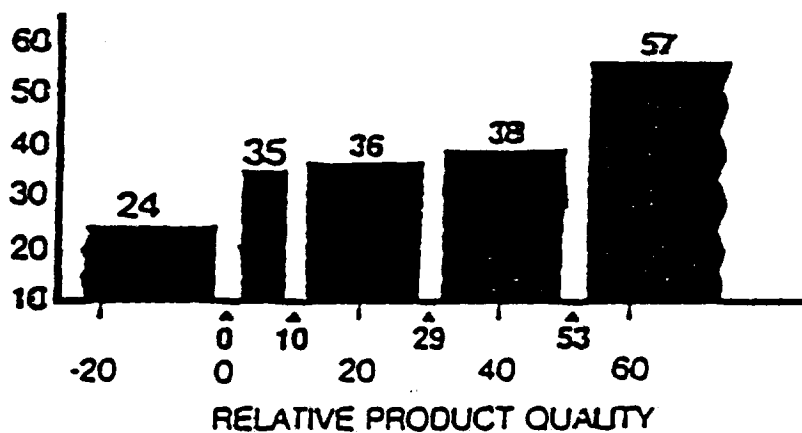
HIGH QUALITY PRODUCTS & SERVICES ARE MOST PROFITABLE



2021554452

THE PROBABILITY OF ACHIEVING AN "ADEQUATE" RETURN
IMPROVES WITH RELATIVE PRODUCT QUALITY

% BUSINESSES WITH PRE-TAX ROI
GREATER THAN 25%



2021554453

Quantifying Customer-Perceived Relative Product Quality

Identify Key Customer Needs

Business _____ Year _____

Customer Concerns (Key Purchase Criteria)	Relative Importance to Customers (%)	Customer Rating							
		Comp. A 1-10	Comp. B 1-10	Comp. C 1-10	Avg. for Comps.	Your Business 1-10	Your Business		
							S u p e r i o r	E q u i v a l e n t	I n f e r i o r
Product-Related Factors									
1 _____									
2 _____									
3 _____									
4 _____									
5 _____									
6 _____									
7 _____									
Service-Related Factors									
1 _____									
2 _____									
3 _____									
4 _____									
5 _____									
6 _____									
7 _____									
Totals	100%								

% Superior = 1 pt. above average for competitors

% Equivalent = within 1 pt. of average for competitors

% Inferior = 1 pt. below average for competitors

Relative Product Quality = Superior minus Inferior =

2021554454

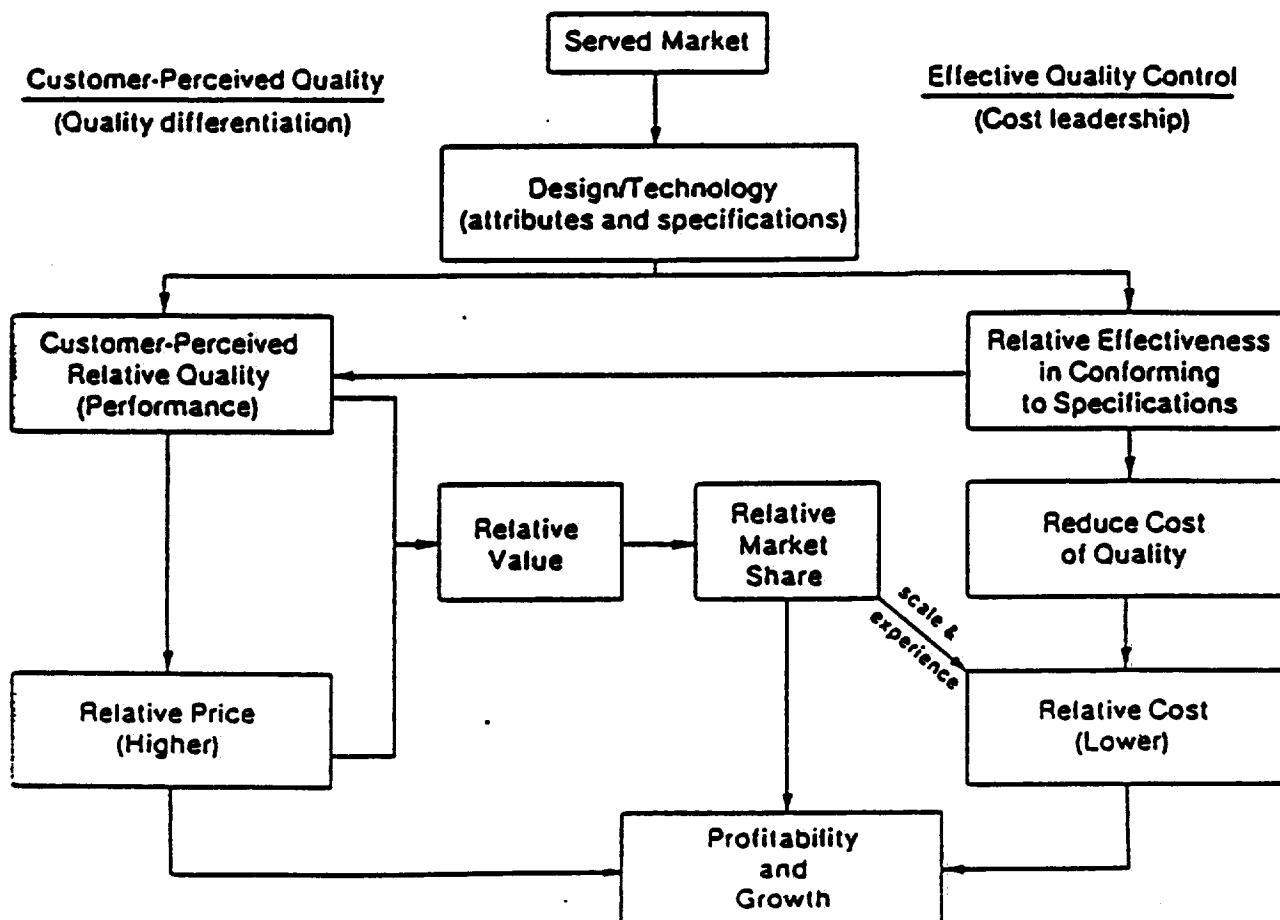
Key Questions

- Why is customer-perceived quality important?
- How can you formulate a product quality strategy?

IPSE21

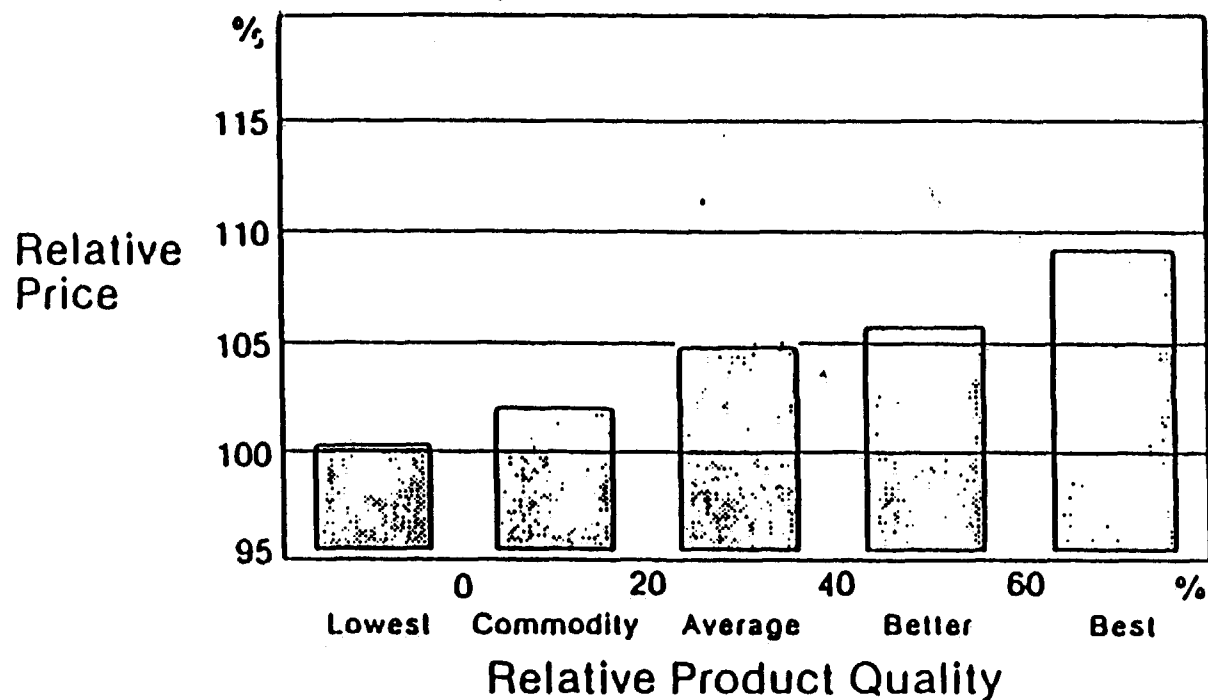
2021554455

How Quality Drives Profitability and Growth



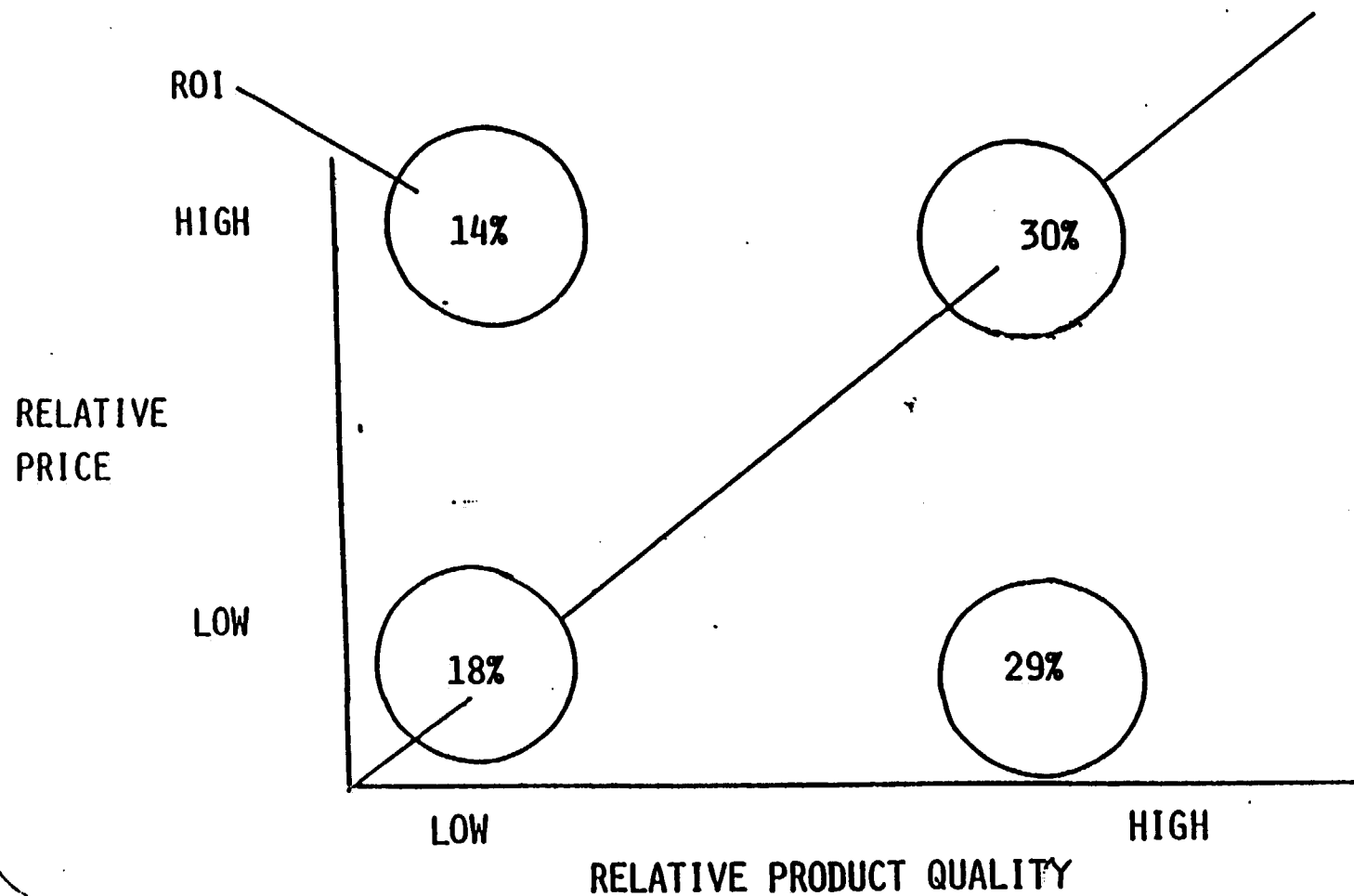
2021554456

Customers Pay More for Better Products



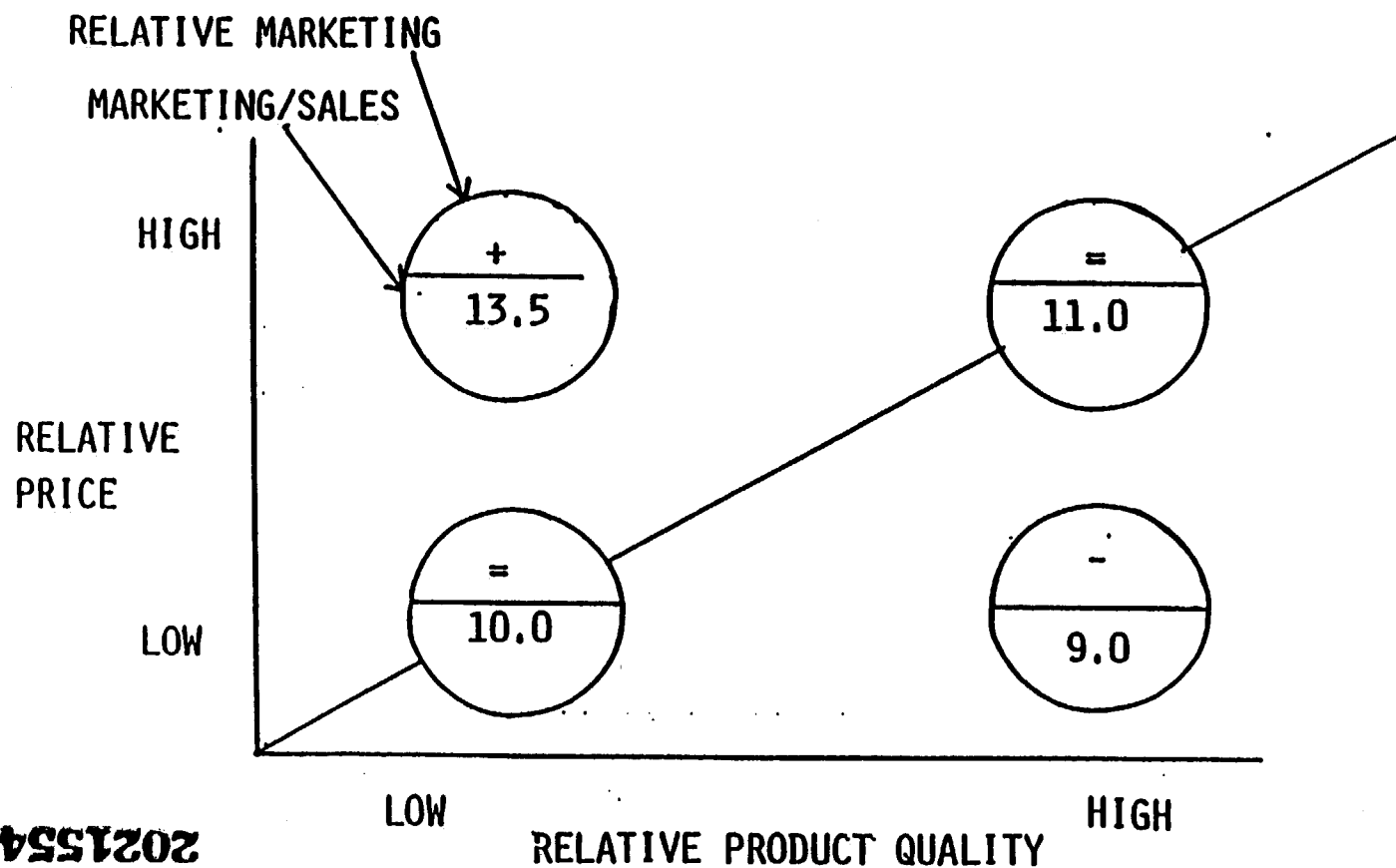
2021554457

WORSE VALUE MEANS POOR RESULTS



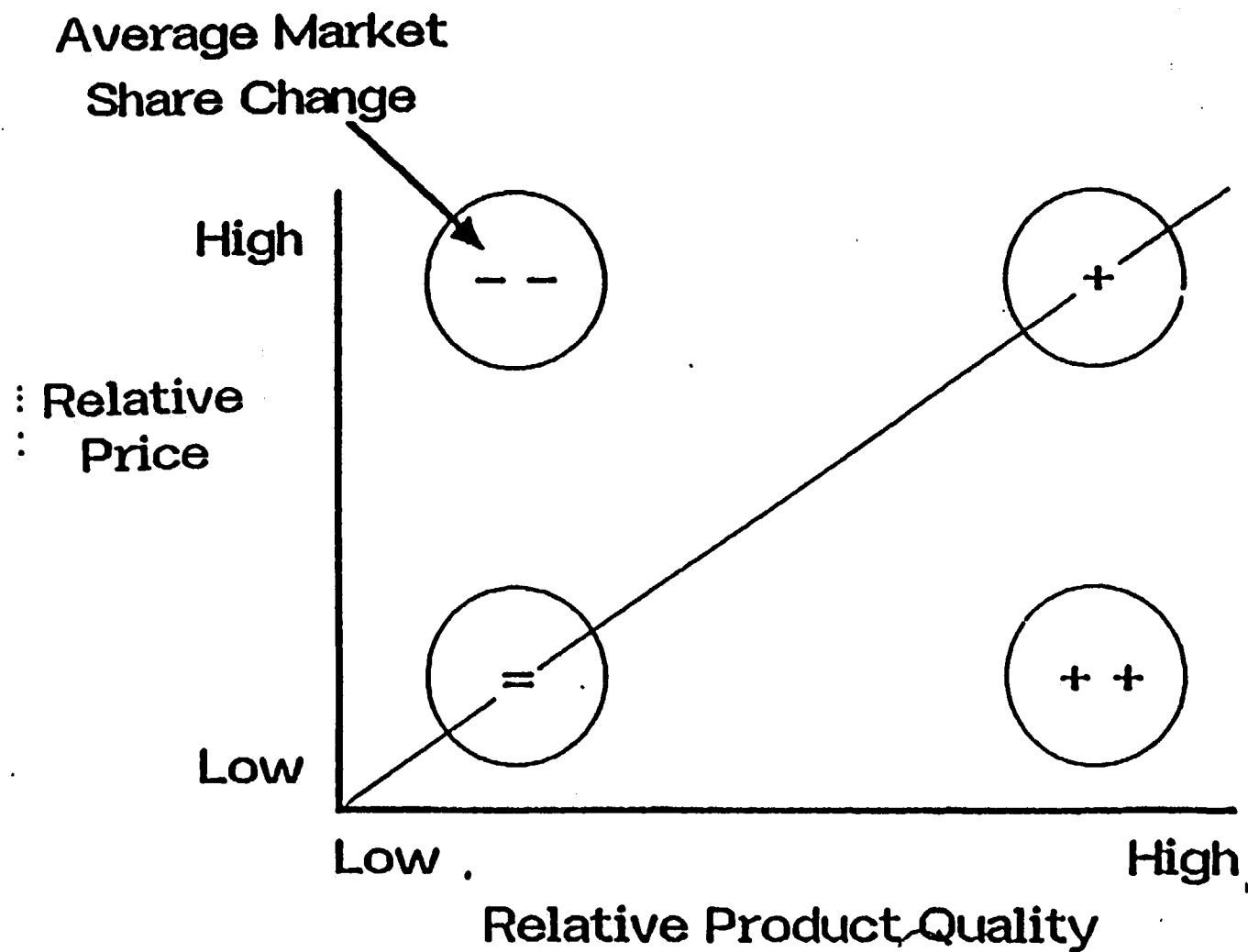
2021554458

POOR VALUE BUSINESSES LOSE SHARE,
IN SPITE OF HIGHER MARKETING EXPENDITURE



2021554459

POOR VALUE BUSINESSES LOSE SHARE



2021554460

High and Rising Product Quality Increases Odds of Gaining Share

Percentage of
Businesses
Gaining Share

Change in
Product Quality

Rising	62	62	67
	50	50	55
Falling	26	40	54

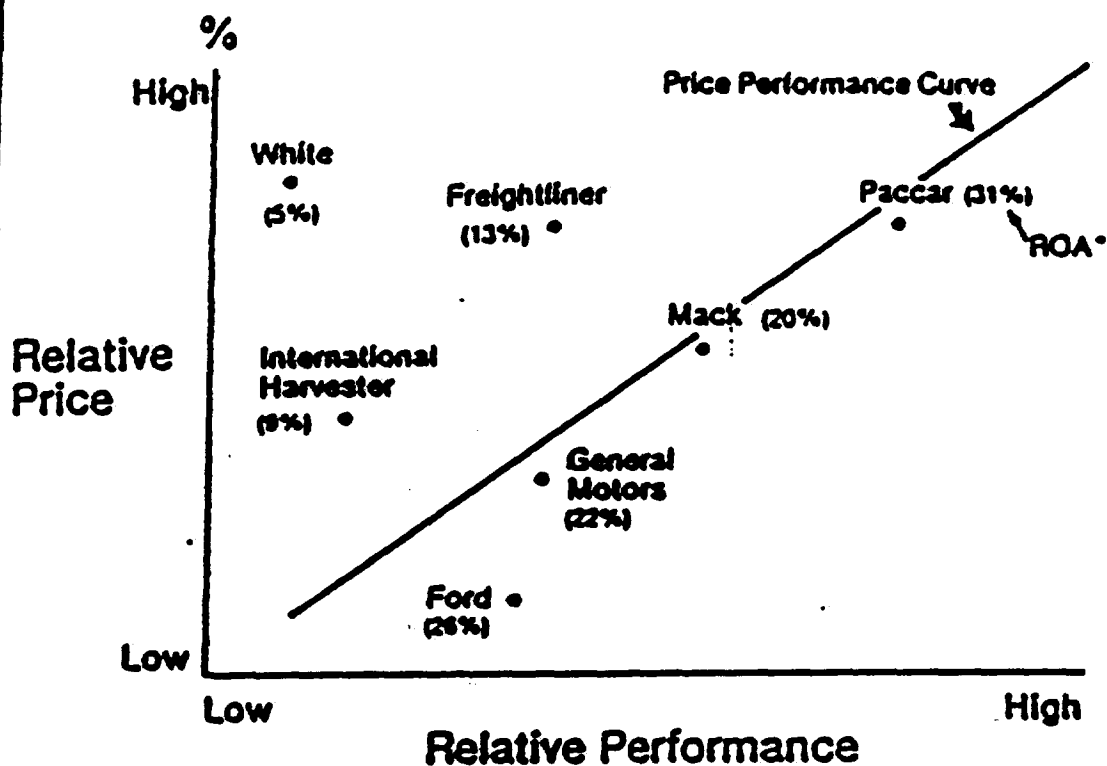
Low (-1) (+40) High

Beginning Product Quality

2021554461

Source: PIMS data base

Value Map: Heavy-Duty Trucks



*Public data sources were used to estimate ROA (return on assets). Price and performance positions are based on an article by Hall, HBR July-August 1980.

2021554462

"Quality is our best assurance of customer allegiance,
our strongest defense against foreign competition, and
the only path to sustained growth and earnings."

John F. Welch Jr.

Chairman

General Electric Company

Business Week, November 1, 1982

2021554463

Quality Winners vs. Quality Losers

Winners

- Emphasized real customer expectations
- Researched customer needs
- Used customer-based quality performance measurements
- Formulated QC systems for all functions

Losers

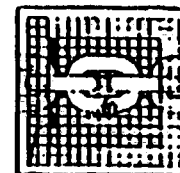
- Downgraded the customer view
- Made high quality synonymous with tight tolerances
- Tied quality objectives to manufacturing flow
- Expressed quality goals as number of defects per unit
- Formalized QC systems only for manufacturing

Source: GE task force on product quality

2021554464



QUALITY POLICY



October, 1983

The quality of products and services is of the utmost importance for the continuity of our Company.

By adopting a quality policy aimed at complete control of every activity, maximum quality, productivity, flexibility and a reduction in cost prices will be achieved.

Every employee must be imbued with an attitude directed towards a continuous striving for improvements.

The Board of Management has decided to give vigorous direction to a Company-wide approach to quality improvement.

Further shape and content will be given to this initiative in the coming months.

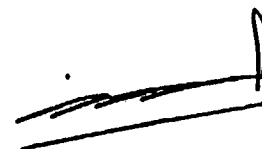
The main points of our quality policy are:

- 1 Quality improvement is primarily a task and responsibility of management as a whole.
- 2 In order to involve everyone in the Company in quality improvement, management must enable all employees – and not only the employees in the factories – to participate in the preparation, implementation and evaluation of activities.
- 3 Quality improvement must be tackled and followed up systematically and in a planned manner. This applies to every part of our organisation.
- 4 Quality improvement must be a continuous process.
- 5 Our organisation must concentrate more than ever on its customers and users, both outside and inside the Company.

2021554465

- 3 Quality improvement must be tackled and followed up systematically and in a planned manner. This applies to every part of our organisation.
- 4 Quality improvement must be a continuous process.
- 5 Our organisation must concentrate more than ever on its customers and users, both outside and inside the Company.
- 6 The performance of our competitors must be known to all relevant units.
- 7 Important suppliers will have to be more closely involved in our quality policy. This relates to both external and internal suppliers of goods as well as of resources and services.
- 8 Widespread attention will be given to education and training. Existing education and training activities will be assessed, also with regard to their contribution to the quality policy.
- 9 Publicity must be given to this quality policy in every part of the Company in such a way that everyone can understand it.
All available methods and media will be used for internal and external promotion and for communication.
- 10 Reporting on the progress of the implementation of the policy will be a permanent point on the agenda in Review meetings.

The Quality Steering Group, under the direction of the Board of Management, together with the Corporate Quality Bureau will provide support and coordination at corporate level.



Dr. W. Dekker



PHILIPS

2021554466

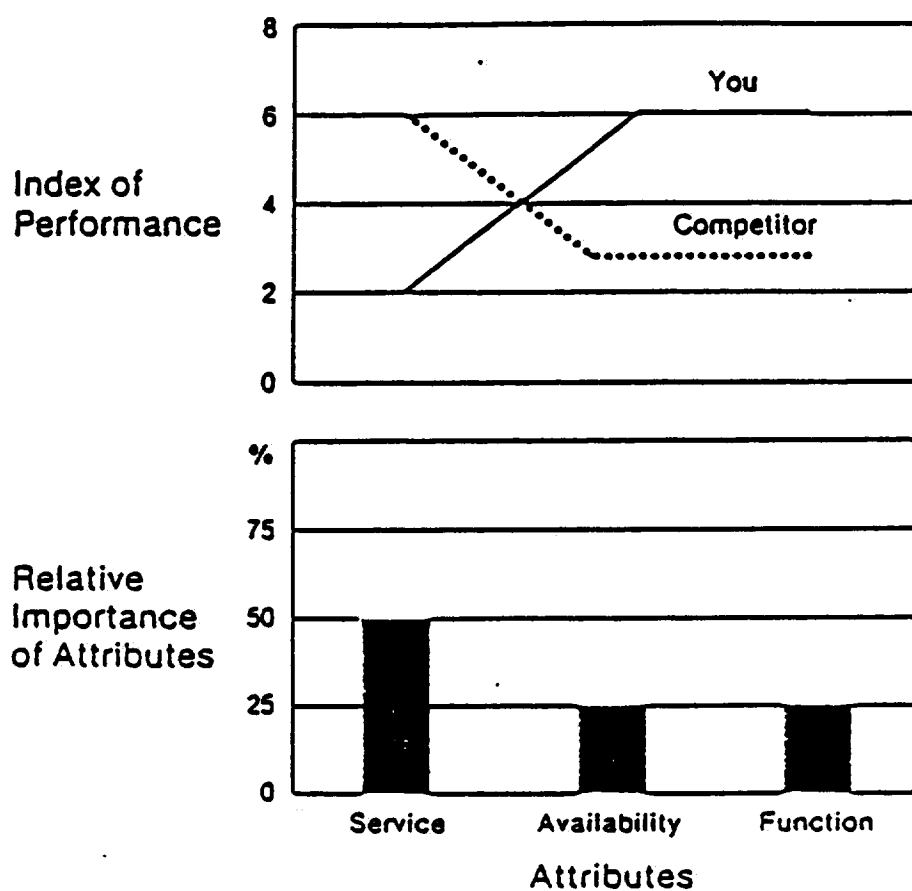
Developing Action Plans to Improve Quality

- Nominate a quality differentiation strategy based on the most meaningful way to segment the market to gain competitive advantage
- Analyze the differences between the opinions of managers (quality profiling sessions) and customers (surveys)
- Develop a consensus on
 - What management thinks customers want
 - What customers want
 - Which attributes need improvement
 - Which functional departments need to take what action
- Enhance cooperation across functional departments by focusing your
 - Product design
 - Manufacturing process
 - Product service
 - Quality control system and
 - Marketing effortto be more effective in delivering quality and value to your various customer segments.
- Design a quality program that specifically aims functional projects at your product attribute improvement needs

2021554467

Going through Quality Profiling You Discover More about the Marketplace (attributes, weights, ratings)

All respondents



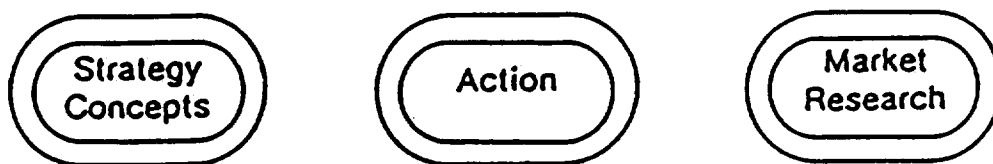
2021554468

Options for Improving Relative Product Quality

- **Relative Performance**
 - Change performance of your product
 - Change perception of performance (Salesforce, advertising)
 - You
 - Competitor
- **Importance of Attribute**
 - Change mix of individuals
 - Market segmentation / focus
 - Decision maker
 - Change perception of individuals (Salesforce, advertising)

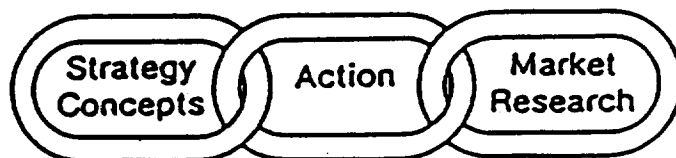
2021554469

Formulating a Product Quality Strategy



Process

- Avoids narrow technical focus of market research
- Avoids abstract flavor of strategic concepts
- Ensures management involvement
- Ensures coupling across functions



Results

- No essential steps overlooked
- Quantified payoff
- Commitment to implementation
- Cooperation across functions

2021554470